THE JERUSALEM ARTICHOKE AS A WAR PLANT

In the March number of the *Scientific Monthly,* Professor T. D. A. Cockerell publishes an interesting article entitled "The Girasole, or Jerusalem Artichoke, a Neglected Source of Food." It will be interesting to add that the French Academy of Agriculture has by no means overlooked this important plant, the French name of which is *topinambour.* For the last two or three years the Comptes Rendus des Séances de l'Académie d'Agriculture has contained frequent references to the value of this crop, most of the communications having been made by M. Schribaux. In the last number, which comes to my desk today, M. Schribaux presents an interesting communication from M. Thiry, director of the Agricultural School of Tomblaine near Nancy. He says that in a normal year only about a hundred hectares are planted in Lorraine, but he believes that the plant is capable of rendering great services. In his own family they have regularly raised and eaten the *topinambour* since at least 1860. All of the agricultural land in Lorraine is not well adapted to its cultivation, only light lands being best adapted. In general, they feed the tubers to the horses, giving a little to the pigs, but never to the cattle, for they think that this diet gives the milk a bluish tinge. He states that the crop is more productive than potatoes, and they often raise at Tomblaine thirty thousand kilograms to the hectare. He uses the variety called *patate* by Vilmorin. It has more regular tubers, and while not less productive is more delicate than the ordinary variety. He has eaten them in his house for a long time, since he tasted Jerusalem artichokes in England, and he has fed them to the children of the refugees whom he has taken in. Last year the people of Nancy wished to eat them, since potatoes were out of their reach, but at that time they were beginning to germinate and were not edible. He thinks the plant is a very remarkable one, and that in fertile earth well worked it will repay the labor of the farmer with great interest. Whether the climate is severe or dry, and even when the earth is poor and weedy, the crop will still be satisfactory, and it lacks the diseases of the potato. He believes it to be *a war plant of the first order.* He thinks that a serious effort should be made to propagate this vegetable in all France.

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POISONING TREE PARASITES WITH CYANIDE OF POTASSIUM

Some three years ago there was discussion in this journal of the method of killing insect parasites of fruit trees by placing cyanide of potassium under the bark. Success was reported from such inoculation of peach trees. Others reported that cyanide of potassium mixed with other poisons, when used in the same manner, caused the death of the tree within two or three years.

Three years ago, in the spring, I bored half inch holes in each of six apple and pear trees and filling these holes with powdered cyanide of potassium, "chemically pure," plugged them up. Four of these trees were apparently dying from scale, the other two were infested but not dying. During the summer all six became free from scale and the four dying ones began to recuperate. In the fall both the apple and the pear trees bore good fruit which was palatable and harmless. All the trees are now healthy and vigorous after three years, and there are no areas of dead bark around the inoculation holes.

This seems an indication that inoculation with cyanide of potassium, when used without admixture of other drugs, is not necessarily injurious to apple and pear trees. Its effectiveness as a parasite exterminant is rendered doubtful, however, by the fact that the scale died on all my other trees which were not inoculated. One of these trees was practically dead at that time, having lost all but two of its branches, but it is now vigorous. I lost two good trees from scale before this. Scale had been becoming more and more troublesome in northern Ohio for a number of years, but three years ago many infested trees became entirely free or almost free from the pest, and in this whole region there was marked improvement in the orchards, which

are not yet back to their former bad condition.

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SYSTEMATISTS AND GENERAL BIOLOGISTS

MAY I endorse the suggestion by Dr. L. O. Howard?[1] He says that he does not know whether determination of species is important to the experimental embryologist. When, as zoological recorder for Echinoderma, it was my duty to read a large number of papers by those workers, I formed the opinion that it certainly was important, and wrote:[2]

> It is well to urge on those gentlemen the need for an accurate determination of the material with which they work. They are too much inclined to infer the universal from the particular, and to overlook the fact that species and even local races differ from one another in their reproduction and development, just as much as in their habits and perhaps more than in their structure.

This plea was strongly supported by Viguier.[3]

Accurate discrimination of species is no less necessary for the field naturalist. J. H. Fabre, always ready to gird at the museum worker, had to confess that he had confused under the one name *Eumenes pomiformis* three species of mason-wasps, so that it was not possible for him "to ascribe to each of them its respective nest" (I quote from the selection just published under the title "The Wonders of Instinct," London, Fisher Unwin).

Most geologists have by this time learned that, for lack of the precautions advocated by Dr. Howard, many of their fossil lists are not worth the paper they are printed on. Recent advances in stratigraphical geology are almost entirely due to the keener appreciation of minute specific differences.

In a word, every kind of biologist should find in the despised taxonomist a valuable, indeed an indispensable, ally; and in our museums he should recognize a depository where the evidence for his conclusions may be preserved for future generations of workers.

LONDON F. A. BATHER

[2] *Zool. Rec.*, for 1901.

[1] SCIENCE, January 25, p. 93.

[3] 1903. *Ann. Sci. Nat. Zool.*, ser. 8, Vol. 17, p. 71.

SCIENTIFIC BOOKS

Lectures on Heredity. By H. S. JENNINGS, Ph.D., LL.D., Johns Hopkins University; OSCAR RIDDLE, Ph.D., Department of Experimental Evolution, Carnegie Institution; and W. E. CASTLE, Ph.D., Harvard University. Delivered under the auspices of the Washington Academy of Sciences, Washington, D. C. 1917. Pp. 82. Bound in buckram, 50 cents.

This is the second annual series of lectures presented before the Washington Academy of Sciences and reprinted in collected form from the *Journal* of that academy.

The study of genetics has become so highly specialized that workers in the different fields have ceased, except in rare instances, to make a serious effort to coordinate their work with that of others.

Dr. Jennings's classical work on the nature of variations in lower organisms deals with one of these highly specialized branches, and students of other branches should appreciate the service rendered by Dr. Jennings in his painstaking comparison.

"Having satisfied myself as to the nature of the variations that arise in the creatures that I have studied, I have looked about to see what other workers have found; and to determine whether any unified picture of the matter can be made."

After claiming that the idea of genotypes must be admitted as a general condition, the author concludes that this result "is not final, that it does not proceed to the end."

In a uniparental organism, from which all question of the recombination of existing diversities is eliminated, Dr. Jennings finds that "the immense majority of the hereditary variations were minute gradations. Variation is as continuous as can be detected."

The points at issue between the "genotypic mutationists" and the upholders of gradual change are clearly and concisely stated. Setting aside the question whether the evidence held to support the gradual change theory is conclusive or not, he proceeds directly into territory of the mutationists and shows that the "multiple allelomorphs" found in *Droso-*